SUBJECT: How to Remove Your Underground Storage Tank From the Ground

Any owner or operator who intends to permanently remove an underground storage tank (UST) system from service by having the tank(s) removed from the ground shall ensure that the procedures used: conform with accepted industry practices; are in accordance with a code or standard of practice developed by a nationally recognized association or independent testing laboratory; are in compliance with any applicable federal, state and local governmental regulations; are in compliance with Texas Natural Resource Conservation Commission (TNRCC) rules (Title 30 Texas Administrative Code [TAC], Chapter 334, Subchapters A, C, D, and I) and minimize the possibility of any threat to human health and safety or the environment.

This document addresses only the **removal** of a UST system, which is one of three methods which can be used to permanently remove a tank from service. (Abandonment-in-Place or Permanent Change in Service can also be utilized.)

The following guideline is provided to help describe the major activities involved in a "routine" UST removal. **This document is only intended as a guideline and the user is reminded that thorough knowledge of and compliance with all applicable federal, state, and local governmental regulations as well as applicable and accepted industry codes, practices, standards and procedures is required.**

I. NOTIFICATION and ADVANCE PREPARATION

A. The owner, operator, or designated agent shall first provide written notification, which must be received by the TNRCC at least 30 days in advance of any pending tank removal activity, using a TNRCC authorized form which must be sent to the TNRCC's central office in Austin or to the appropriate TNRCC Regional Office in accordance with 30 TAC §334.6 (relating to Construction Notification).

B. The removal of underground storage tank systems can only be performed by qualified personnel who hold an appropriate license or certificate from the TNRCC. The owner, operator or designated agent must therefore retain the services of a UST contractor, registered with the TNRCC. This contractor is required to utilize a UST on-site supervisor who holds a valid TNRCC Class "B"license (see also Sections I-E II-A and III-A of this document). (30 TAC, Chapter 334, Subchapters C and I)

C. The owner, operator or designated agent should also notify local government (city and/or county) and the local and/or state Fire Marshal of the intent to remove a UST system. Any necessary permits, if applicable, should be obtained.

D. In addition to advance written notification of the TNRCC, the owner, operator, or designated agent must also contact the appropriate TNRCC Regional Office 24 to 72 hours in advance of initiating construction activities. (30 TAC §334.6)

E. The following steps are **suggested** prior to initiating removal. (Note that these steps do not require notification, do not require the use of a registered UST contractor, and do not require the presence of a licensed UST on-site supervisor).

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1. Locate all underground and above-ground utilities.

2. Remove pavement over USTs (concrete, asphalt, etc.).

3. Relocate affected objects and structures (if applicable).

II. TANK PREPARATION

A. Empty all product piping and ancillary equipment (into the tank, if possible), disconnect it, then properly cap, plug or remove it in accordance with accepted industry procedures. (**Leave vent lines in place.**) (Note that the removal of product piping requires the presence of a licensed UST on-site supervisor who holds a valid TNRCC Class "B" license.) (API-1604; 30TAC §334.55, §334.412, and §334.414)

B. Remove all regulated substances and clean out all accumulated sludges or residues from the tank in accordance with accepted industry procedures. (Note that sludges, residues, and wash water may be classified as hazardous wastes). (API-1604 and 30TAC §334.55)

C. Purge the tank of all flammable vapors in accordance with accepted industry procedures by the use of inert gas (such as carbon dioxide or nitrogen) displacement, by ventilation using an air eductor type mover or a diffused air blower, or by filling with water to displace vapor and dissolved residues. The lower explosive limit (LEL) must be less than twenty percent (<20%) prior to the removal of the tanks from the ground and must be maintained at or below this level from this point until the tank reaches a final disposal site. (Note: Inert gases must be introduced at **low** pressures and ventilators must be properly grounded and/or bonded to prevent the generation and discharge of static electricity; inert gas displacement eliminates oxygen from the tank and breathing apparatus is necessary for entry; air eduction ventilation requires leaving the tank fill tube in place; diffused air ventilation requires removing the tank fill tube; and the treatment or disposal of contaminated water used for purging may be cost prohibitive.) (API-1604 and 30TAC §334.55)

D. Frequently check the vapor concentration in the tank using a combustible gas indicator (CGI) to determine the lower explosive limit of the tank. Take readings at the bottom, middle, and upper portions of the tank for each check. If the CGI probe is inserted through the fill opening, make sure the drop tube is removed. Clear the CGI after each reading. Make sure the CGI is properly calibrated before use. CGI readings may be in error in low oxygen atmospheres. Check oxygen levels with an oxygen meter when in doubt. Please note that flammable vapors may flow into the surrounding tank pit areas. This possibility can be reduced by capping all openings except the vent line while purging. Observe all normal safety precautions regarding flammable vapors. (API-1604, and 30TAC §334.55)

E. Once the tank has been completely purged of all flammable vapors, all holes and openings shall be properly plugged or capped, except for one 1/8-inch diameter vent hole positioned at the top of the tank. (API-1604 and 30TAC §334.55)

III. TANK REMOVAL

A. A UST on-site supervisor, holding a valid Class "B" license from the TNRCC, must be present during the entire time that removal activities are in process; beginning with the initial excavation of **backfill** material (after removal of any pavement cover) and continuing through the time the tank is physically removed from the site. (30TAC §334.55, §334.412, and §334.414)

B. Remove soil overburden/backfill from the top, sides and ends of the tank. (API-1604)

C. Physically remove the tank from the ground and place on a level surface. Chock the tank with wooden blocks of appropriate size to prevent movement. After removal, a tank shall be transported from the site within 24 hours of the removal, unless prior approval of a longer on-site storage period is obtained from the appropriate TNRCC District Office. (API-1604 and 30TAC §334.55)

D. On-site storage of tanks for 24 hours or less must be in a designated area which is an adequate distance from known ignition sources and is clearly identified with appropriate barriers and warning signs to restrict access by unauthorized persons. (30TAC §334.55)

E. On-site storage of removed tanks for more than 24 hours and off-site storage for any period of time is only allowed in locked, securely fenced, or similarly restricted areas where unauthorized persons will not have access.

F. No later than 24 hours after removal, all removed tanks (regardless of condition) shall be legibly and permanently labeled (in letters at least 2-inches high) with the name of the former contents, a flammability warning (if applicable), and a warning that the tank is unsuitable for the storage of drinking water or the storage of human or animal food products. (30TAC §334.55, API-1604 and API-2015A)

G. Residual vapor levels in any removed tank must be maintained at non-explosive and non-ignitible levels at all times. (30TAC §334.55)

H. Regardless of where the tank is stored, not later than ten days after the tank has been removed from the ground, any residual liquids or vapors shall be **permanently** removed to render the tank non-ignitable and non-explosive. (30TAC §334.55)

IV. TANK TRANSPORTATION

The methods and procedures used for the handling and transporting of any removed underground storage tanks (and parts of such tanks) shall be protective of human health and safety and the environment, and shall be in accordance with all applicable federal, state and local regulations.

Prior to transporting any removed tank from a UST facility, the following minimum preparation procedures shall be followed:

A. Ensure, in accordance with commonly used and accepted industry practices, that all remaining regulated substances have been removed, and that visible residues or sediments have been cleaned from the tank as completely as possible. (30TAC §334.55)

B. Ensure that residual vapor concentrations in the tank remain at non-explosive and non-ignitable levels. These **concentrations must** then **be frequently checked and maintained** at **non-explosive** and **non-ignitible** levels during the entire period of transportation. (30TAC §334.55)

C. Ensure that all holes/openings in the tank are plugged or capped except for one 1/8-inch vent hole positioned at the top of the tank during transportation. (30TAC §334.55)

V. TANK STORAGE AND DISPOSAL

A. Removed tanks (and any parts of such tanks) which have been emptied, **thoroughly cleaned** of all remaining substances and any remaining residues, and **permanently purged** of vapors may be appropriately disposed by scrapping, junking, or reusing for purposes unrelated to the underground storage of regulated substances. (30TAC §334.55)

B. Regardless of where the tank is stored, not later than ten days after the tank has been removed from the ground, any residual liquids

or vapors shall be **permanently** removed to render the tank non-ignitable and non-explosive. (30TAC §334.55)

C. Off-site storage of removed tanks for any period of time is only allowed in locked, securely fenced, or similarly restricted areas where unauthorized persons will not have access. (30TAC §334.55)

VI. RELEASE DETERMINATION

As part of the required procedures for the permanent removal of any underground storage tank system from service, the owner or operator shall determine whether or not any prior release of a stored regulated substance has occurred from the system. This determination must be capable of measuring for the presence of a release from any part of the UST system and, at minimum, must include measurements for releases at locations where contamination is most likely to be present. It must be performed after submittal of construction notification and before the completion of the permanent removal from service. One or more of the following methods may be used for conducting the release determination: (30TAC 334.55)

A. The continual operation (through the time that the stored regulated substances are removed from the UST system) of one or more of the external release monitoring and detection methods specified in 30TAC §334.50(d)(4) through (d)(8).

B. The performance of a comprehensive site assessment, conducted by qualified personnel possessing the appropriate skills, experience, and competence to perform the assessment in accordance with recognized industry practices and TNRCC rule requirements. One or both of the following methods may be used for conducting the site assessment: (30TAC §334.55)

1. The collection and analysis of soil samples secured from unsaturated sections of the UST system excavation zone and surrounding soils, where such samples shall be analyzed for major constituents and/or indicator parameters of the stored regulated substance(s).

2. Collection and analysis of groundwater samples secured from the UST system excavation zone and surrounding area, where such samples shall be analyzed for all major constituents or indicator parameters of the stored regulated substance(s).

For additional information regarding sample collection techniques and preferred analytical methods, refer to the pamphlet entitled *Soil And Groundwater Sampling And Analysis* (formerly pamphlet PST 91-06).

VII. RELEASE REPORTING

If sample analyses indicate that a release of a regulated substance has occurred, the TNRCC must be contacted within 24 hours of the discovery of the release, even if no further action will be required.

VIII. EXCAVATION

For any overexcavation activities to be reimbursable, written approval is required from the TNRCC. Normally this approval will be issued only after a site assessment and a remedial action plan have been completed. However, under certain circumstances, particularly emergency situations, additional excavation may be allowed at the time of tank removal. For further details, contact the site remediation coordinator.

IX. BACKFILLING

After removal of the tank system, the excavated areas should be backfilled to grade as soon as possible for safety considerations. In situations when contaminated material is used for backfilling excavations in which a new

tank installation will not occur, this material should be placed in the bottom of the pit and subsequently covered with clean materials to the original grade. When contaminated backfill can not be utilized in the excavation, it must be treated and/or disposed. For information on the reuse of treated soils, refer to 30 TAC §334.501.

X. RESURFACING

After all excavated areas have been backfilled to their original grade, the excavated areas should be resurfaced with the same paving material which existed prior to tank removal activities.

XI. WASTE HANDLING, DISPOSAL, OR TREATMENT

The handling, transportation, storage, treatment, and disposal of any regulated substances removed from an underground storage tank system, and any contaminated soils, backfill material, groundwater, or other wastes generated during site activities shall be conducted in a safe and environmentally sound manner, and shall be in accordance with all applicable federal, state, and local regulations.

XII. TANK REMOVAL DOCUMENTATION

Tank removal documentation that includes all pertinent details of the UST system excavation and removal processes must be submitted to the TNRCC. **Tank removal documentation does not have to conform to any specific report format.** Tank removal documentation should include:

A. A written description of the conditions of the tanks and/or lines at the time of their removal.*

B. A cumulative table of laboratory analysis results for all soil and water samples collected, including verification samples. The table should include the sampling date, sample location designations, sample depths, and the analytical results for each sample. Lab reports and chain of custody documentation should also be submitted.

C. A written description of the removal, transportation and disposition of the tank(s), all substances removed from the tank, all contaminated soils and water, and all other associated wastes. This accounting should include copies of all required waste manifests.*

D. A **copy** of the original Construction Notification Form which was filed for the removal activity.

E. The TNRCC Central Office tracking number for the removal activity. If unknown, then provide a **copy** of the TNRCC letter which acknowledged receipt of the original Construction Notification form.

F. A **copy** of an amended TNRCC UST Registration form, signed by the owner or his representative, showing the date the tank(s) was/were removed from the ground.

G. A site drawing (to scale) which portrays the following:

1. the locations and types of USTs formerly in place;
2. the locations of the former product lines and dispensers;
3. the locations (with designation numbers) of all samples collected during the UST removal process;
4. the final limits of excavation;
5. a North arrow; and
6. a bar scale.

* The inclusion of photographs can be helpful when describing tank and/or line conditions or the removal process. If photos are provided, they should be glued or taped to a letter-sized sheet of paper with a description of the view typed or printed beneath each photo.

XIII. OWNER RECORDS

The owner must keep a record of the removal in a secure location either on the premises of the facility or at an alternate site. If the record is kept at an alternate site, the owner or operator must notify the TNRCC, in writing, within 30 days of the removal, as to the specific location of the site and the name, address and telephone number of the authorized custodian. Regardless of where it is kept, the record must be readily accessible for reference and use by the UST system operator and readily available for inspection by TNRCC personnel. This record must contain: the prior location of the tank; the date of removal; the substance previously stored; the method of conditioning the tank for removal; the methods of handling, transporting, storing and disposing of the tank; the names, addresses and telephone numbers of the persons conducting the activities and any information regarding any known releases from the tank. This record must be maintained for as long as **any** UST remains in service at the facility or for 5 years after the only (or last) UST is permanently removed from service. (30TAC §334.10 and §334.55)

Please contact the PSTD Technical Services Section at 512/908-2182 if you have any questions.

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